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What is claimed is:

1. A barrier operator for opening and closing a movable barrier, comprising:
  - a barrier drive;
  - means for detecting motion of the movable barrier;
  - means for detecting when a barrier command signal has been given to the barrier drive;
  - means for storing a commanded state of the barrier drive;
  - means for comparing the commanded state with the motion indicated by said barrier motion detection means, and for indicating if the motion conflicts with the commanded state; and
  - means for generating an alarm signal in response to the conflict indication of said comparing means.
2. A barrier operator for opening and closing a movable barrier according to claim 1, further comprising means for enabling the alarm signal generating means a preselected time interval following closure of the barrier.
3. A barrier operator for opening and closing a movable barrier according to claim 2, further comprising means for optically detecting the presence of an obstacle adjacent the barrier and producing an obstacle detection signal in response thereto, said obstacle detection means being inhibited in response to the means for enabling alarm signal generation.
4. A barrier operator for opening and closing a movable barrier according to claim 1, further comprising a barrier position detection switch for generating a barrier closure signal when the barrier is substantially closed and providing the barrier closure signal to the means for generating the alarm signal indicative of the fact that the barrier has been closed.
5. A barrier operator for opening and closing a movable barrier according to claim 1, further comprising means for causing the barrier drive to supply a closing force to the movable barrier in response to the alarm signal from the means for generating the alarm signal.
6. A barrier operator for opening and closing a movable barrier according to claim 5, further comprising means for the barrier drive to cease supplying a closing force after a predetermined time interval.
7. A barrier operator for controlling a movable barrier, comprising:
  - a down limit detector disposed to indicate whether said barrier is at a closed position or not;
  - memory means for storing one of a set of states of said barrier, the set of states including a CLOSED state indicating said barrier is closed;
  - alarm generation means, responsive to the barrier state stored by said memory means and said down limit detector, for generating an alarm signal when the stored barrier state is CLOSED and said down limit detector indicates said barrier is not at a closed position; and
  - alarm enabling means for enabling said alarm generation means a preselected time interval after said barrier is closed.
8. A barrier operator according to claim 7, wherein said alarm enabling means is responsive to an indication from said down limit detector that said barrier is closed for initiating the preselected time interval.
9. A barrier operator according to claim 7, further comprising:
  - down motor signal means, for providing a down motor signal in response to said alarm signal; and
  - a barrier drive responsive to said down motor signal for closing said barrier.

10. A barrier operator according to claim 9, further comprising:

obstacle detector for detecting an obstacle to movement of said barrier, and for generating an obstacle signal in response thereto; and

means for disabling said barrier drive in response to the obstacle signal.

11. A barrier operator according to claim 10, wherein said obstacle detector comprises:

an optical light emitter for emitting light; and

an optical light detector for receiving the light from said emitter, and generating a signal indicative of whether light is received from said emitter or not.

12. A barrier operator according to claim 9, wherein said alarm enabling means is disposed to continuously enable without a preselected time delay said alarm generation means after said alarm generation means has generated an alarm signal, and after said barrier drive has closed said barrier in response to said alarm signal.

13. A barrier operator according to claim 9, further comprising:

a barrier drive motion detector for detecting actual motion of said barrier drive and generating a motion signal indicative thereof; wherein

said alarm generation means receives the motion signal and generates the alarm signal when the stored barrier state is CLOSED, said down limit detector indicates said barrier is not at a closed position, and said motion detector indicates motion of said barrier drive.

14. A barrier operator according to claim 9, further comprising:

a command signal receiver for receiving a signal commanding said barrier to open, and generating an indication thereof; and

means for providing an up motor signal in response to the receiver indication; wherein

said barrier drive responds to the up motor signal by opening said barrier; and

said memory means stores a state selected from the set of barrier states, other than the CLOSED state, in response to the receiver indication.

15. A garage door operator for opening and closing a garage door, comprising:

a motor for moving the garage door;

a down limit detector, for indicating when the garage door is moved to a closed position by said motor;

timer means enabled by the indication from said down limit detector that the garage door is closed, disposed to indicate when a preselected interval has expired;

command signal means for receiving a commanded state of the garage door; and

a microprocessor responsive to said command signal means for causing said motor to move the garage door to the commanded state, disposed to cause the motor to close the garage door when said timer means indicates the preselected interval has expired, said down limit detector indicates the garage door is not closed, and said command signal means has not received a new commanded state.

16. A garage door operator according to claim 15, further comprising:

a tachometer for detecting rotation of said motor, and for providing an indication thereof to said microprocessor, wherein

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said microprocessor is disposed to cause said motor to close the garage door when said timer means indicates the preselected interval has expired, said tachometer indicates said motor has rotated beyond a preselected threshold, and said command signal means has not received a new commanded state.

17. A garage door operator according to claim 15, further comprising:

an optical obstacle detector, for optically detecting the presence of an obstacle adjacent the garage door and

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producing an obstacle detection signal in response thereto, wherein

said microprocessor is responsive to the obstacle detection signal to cease causing said motor to close the garage door.

18. A garage door operator according to claim 15, wherein said command signal means comprises a radio frequency receiver.

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19. A barrier operator for opening and closing a movable barrier, comprising:

a barrier drive;

a motion detector for detecting motion of the movable barrier;

a command signal detector for detecting when a barrier command signal has been given to the barrier drive;

circuitry for storing a commanded state of the barrier drive;

a controller for comparing the commanded state with the motion indicated by said barrier motion detector, and for indicating if the motion conflicts with the commanded state;  
and

a signal generator for generating an alarm signal in response to the conflict indication of said controller.

20  
19. A barrier operator for opening and closing a movable barrier according to claim 18, further comprising apparatus for enabling the alarm signal generator a preselected time interval following closure of the barrier.

21  
20. A barrier operator for opening and closing a movable barrier according to claim 19, further comprising an obstacle detector for optically detecting the presence of an obstacle adjacent the barrier and producing an obstacle detection signal in response thereto, said obstacle detector being inhibited in response to the signal generator for enabling alarm signal generation.

22  
21. A barrier operator for opening and closing a movable barrier according to claim 19, further comprising a barrier position detection switch for generating a barrier closure signal when the barrier is substantially closed and providing the barrier closure signal to the signal generator indicative of the fact that the barrier has been closed.

23  
22. A barrier operator for opening and closing a movable barrier according to claim 19, further comprising apparatus for enabling the barrier drive to supply a closing force to

the movable barrier in response to the alarm signal from the signal generator for generating the alarm signal.

24  
24. A barrier operator for opening and closing a movable barrier according to claim 23, wherein the barrier drive ceases supplying a closing force after a predetermined time interval.

25  
24. A barrier operator for controlling a movable barrier, comprising:

a down limit detector disposed to indicate whether said barrier is at a closed position or not;

memory for storing one of a set of states of said barrier, the set of states including a CLOSED state indicating said barrier is closed;

an alarm generator, responsive to the barrier state stored by said memory and said down limit detector, for generating an alarm signal when the stored barrier state is CLOSED and said down limit detector indicates said barrier is not at a closed position; and

an alarm enabler for enabling said alarm signal generator a preselected time interval after said barrier is closed.

26  
25. A barrier operator according to claim 24, wherein said alarm enabler is responsive to an indication from said down limit detector that said barrier is closed for initiating the preselected time interval.

27  
26. A barrier operator according to claim 24, further comprising:

down motor circuitry, for providing a down motor signal in response to said alarm signal; and

a barrier drive responsive to said down motor signal for closing said barrier.

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27. A barrier operator according to claim 26, further comprising:

obstacle detector for detecting an obstacle to movement of said barrier, and for generating an obstacle signal in response thereto; and for disabling said barrier drive in response to the obstacle signal.

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28. A barrier operator according to claim 27, wherein said obstacle detector comprises:

an optical light emitter for emitting light; and an optical light detector for receiving the light from said emitter, and generating a signal indicative of whether light is received from said emitter or not.

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29. A barrier operator according to claim 26, wherein said alarm enabler is disposed to continuously enable without a preselected time delay said alarm generator after said alarm generator has generated an alarm signal, and after said barrier drive has closed said barrier in response to said alarm signal.

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30. A barrier operator according to claim 26, further comprising:

a barrier drive motion detector for detecting actual motion of said barrier drive and generating a motion signal indicative thereof; wherein

said alarm generator receives the motion signal and generates the alarm signal when the stored barrier state is CLOSED, said down limit detector indicates said barrier is not at a closed position, and said motion detector indicates motion of said barrier drive.

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31. A barrier operator according to claim 26, further comprising:

a command signal receiver for receiving a signal commanding said barrier to open, and generating an indication thereof; and

circuitry for providing an up motor signal in response to

the receiver indication; wherein

said barrier drive responds to the up motor signal by opening said barrier; and

said memory stores a state selected from the set of barrier states, other than the CLOSED state, in response to the receiver indication.

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22. A garage door operator for opening and closing a garage door, comprising:

a motor for moving the garage door;

a down limit detector, for indicating when the garage door is moved to a closed position by said motor;

a timer enabled by the indication from said down limit detector that the garage door is closed, disposed to indicate when a preselected interval has expired;

a command signal receiver for receiving a commanded state of the garage door; and

a microprocessor responsive to said command signal receiver for causing said motor to move the garage door to the commanded state, disposed to cause the motor to close the garage door when said timer indicates the preselected interval has expired, said down limit detector indicates the garage door is not closed, and said command signal receiver has not received a new commanded state.

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23. A garage door operator according to claim 22, further comprising:

a tachometer for detecting rotation of said motor, and for providing an indication thereof to said microprocessor; wherein

said microprocessor is disposed to cause said motor to close the garage door when said timer indicates the preselected interval has expired, said tachometer indicates said motor has rotated beyond a preselected threshold, and said command signal receiver has not received a new commanded state.

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35  
24. A garage door operator according to claim 33,  
further comprising:

an optical obstacle detector, for optically detecting the presence of an obstacle adjacent the garage door and producing an obstacle detection signal in response thereto, wherein said microprocessor is responsive to the obstacle detection signal to cease causing said motor to close the garage door.

36  
25. A garage door operator according to claim 32, wherein said command signal receiver comprises a radio frequency receiver.

37  
26. A barrier operator for opening and closing a barrier comprising:

a command signal receiver for receiving barrier open and barrier close signals directing the opening or closing respectively of the barrier;

a barrier drive responsive to barrier open and barrier close signals for opening and closing the barrier, respectively;

a closed limit detector for sensing the closed state of the barrier; and

a barrier controller responsive to received command signals and the closed limit detector for generating an alarm signal when the barrier has been in the closed position and an attempt is made to raise the door when no door open command has been received.

38  
27. A barrier operator according to claim 36 comprising a timer enabled by the closed limit detector for indicating that a predetermined period of time has passed.

39  
28. A barrier operator according to claim 36 wherein the barrier drive responds to the alarm signal by applying a closing force to the barrier.

40  
29. A method of controlling a movable barrier for movement between an open position and a closed position

comprising:

receiving barrier movement commands including barrier open commands directing opening movement of the barrier and barrier close commands directing a closing movement of the barrier;

moving the barrier to the closed position in response to a barrier close command;

sensing that the barrier has been moved to the closed position; and

generating an alarm signal when the sensing step indicates that the barrier has moved from the closed position, and the receiving step does not indicate that a barrier open command has been received.

<sup>41</sup>  
~~40~~. The method of claim <sup>40</sup> comprising directing closing movement of the barrier in response to the alarm signal.

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